REMARKS
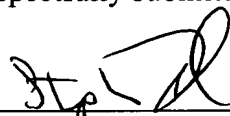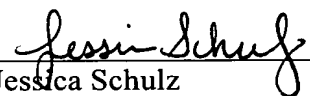
Claims 1 has been amended. Claims 2-31 have been added. Claims 1-31 remain in the case for reconsideration. No new subject matter has been added. Reconsideration is requested.

Accordingly, applicant requests that the amendments be entered and the application be allowed.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Box Fee Amendment, Assistant Commissioner for Patents, Washington D.C. 20231 on: _2 / 6 / 03_

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<u>**VERSION WITH MARKINGS TO SHOW CHANGES MADE**</u>

<u>**In the specification**</u>

Please replace the paragraph beginning at page 5, line 13, with the following rewritten paragraph:

-- Any combination of feature cards can be used in the FTDR 12. The configuration shown in FIG. 2 is only one implementation shown [only] for illustrative purposes. For example, there may be multiple CT3 feature cards 46A and multiple CT1 feature cards 46C. There may be one standby feature card 46B connected in parallel to each active CT3 feature card 46A or only one standby feature card 46B used as backup for multiple CT3 feature cards 46A. --

Please replace the paragraph beginning at page 5, line 32, with the following rewritten paragraph:

-- [Iif] <u>If</u> a DS1 failure occurs in the conversion subsystem 35 (framer 34A, DS0 cross-connect switch 36A, or modem modules 40A), the DCCS 32A connects the DS1 channels either to the redundant module in the same feature card 46A or connects through the DS1 I/O lines 33A to another feature card. For example, if a fault occurs in framer 34A, the DCCS 32A can reconnect the LIU 20A to redundant framer 34D in the same feature card 46A. If both framers 34A and 34D fail, the DCCS 32A can connect the LIU 20A through DS1 I/O lines 33 and backplane 30 to DCCS 32B or DCCS 32C. The DCCS 32B or 32C connect LIU 20A to framer 34B or framer 34C in one of the other features cards 46B or 46C, respectively. --

Please replace the paragraph beginning at page 6, line 20, with the following rewritten paragraph:

-- Another advantage of the FTDR 12 is that more functional elements in different cards can be used to provide redundancy for faults in any other card. For example, in an alternative configuration, feature card 46B is not a standby card coupled to CT3 line 17 but an active feature card connected to a separate CT3 line 37. If the subsystem 35 in feature card 46A fails, calls on T3 line [19] <u>17</u> can be reconnected by DCCS 32A through DS1 I/O line 33A to DCCS 32B. Redundant framer and modem modules in the feature card 46B subsystem can then be used to convert the DS1 data stream from line 17 into digital packets.

Feature cards that normally operate independently can now provide additional redundancy for other feature cards. --

Please replace the paragraph beginning at page 6, line 33, with the following rewritten paragraph:

-- The DCCS's 32A-32C are typically implemented using field programmable gate arrays (FPGA's). The DCCS's 32A-32C provide a 3-way switch matrix function. The DCCS 32C cross-connects the framer 34C or redundant framer 34F to each one of six LIU's 20C on the same feature card 46C. In a second configuration, the DCCS [32] 32C cross-connects the two framers 34C and 34F to the DS1 I/O lines 33C. In a third configuration, the DCCS 32C cross-connects the six LIU's 20C to the DS1 I/O lines 33C. --

In the Claims

Prior to examination, please amend the claims to read as follows:

1.   A [fault tolerant dial router] network processing system, comprising:

a primary line interface unit [couple to telephone lines from a telephone network] configured to interface with communication lines;

a primary [conversion] processing subsystem [converting calls on the telephone] configured to process data received over the communication lines [into packets;

a router routing the packets on a packet based network]; and

a primary cross-connect switch coupled between the primary line interface unit and the primary [conversion] processing subsystem [that reconnects the primary line interface unit to a secondary conversion subsystem when a failure is detected in the primary subsystem] configurable to disconnect the primary line interface unit from the primary processing subsystem and connect a secondary line interface unit to the primary processing subsystem or connect a secondary processing subsystem to the primary line interface unit.

Please add the following new claims 2-31:

2.(New) A network processing system according to claim 1 including a secondary

cross-connect switch coupled between the secondary line interface unit and the secondary processing subsystem, the primary cross-connect switch configurable to connect either one of the primary line interface unit and the primary processing subsystem to the secondary cross-connect switch and the secondary cross-connect switch configurable to connect either one of the secondary line interface unit and secondary processing subsystem to the primary cross-connect switch.

3. (New) A network processing system according to claim 2 wherein the primary processing subsystem is automatically disconnected by the primary cross-connect switch from the primary line interface unit and the secondary processing subsystem is automatically connected through the primary and secondary cross-connect switches to the primary line interface unit.

4. (New) A network processing system according to claim 1 wherein the primary processing subsystem includes a framer for framing multiple groups of telephone calls into individual telephone calls and modem modules for converting the individual telephone calls into packets.

5. (New) A network processing system according to claim 4 including an individual cross-connect switch redirecting individual calls from individual failed modem modules to individual standby modems, the primary cross-connect switch redirecting groups of calls from failed framers or failed banks of modems to secondary framers or secondary banks of modems.

6. (New) A network processing system according to claim 1 including multiple feature cards each having cross-connect switches connected between a line interface unit and a processing subsystem, the cross-connect switches in the feature cards connected together for connecting the line interface unit in any feature card to the processing subsystem in other feature cards.

7. (New) A network processing system according to claim 6 wherein at least one of the feature cards converts between channelized T1 telephone calls and network IP packets

and at least one of the feature cards converts between channelized T3 telephone calls and network IP packets.

8. (New) A network processing system according to claim 6 including a processor on the feature cards that monitors for failures and automatically reconfigures the cross-connect switches on the feature cards according to the monitored failures.

9. (New) A switch, comprising:
a first interface configured to connect to a first line interface unit;
a second interface configured to connect to a first packet processing circuit that processes data received by the first line interface unit; and
a third interface configured to connect to either a second line interface unit or a second packet processing circuit;
the switch disconnecting from the first line interface unit and connecting to the second line interface unit when the first line interface unit fails and disconnecting from the first packet processing circuit and connecting to the second packet processing circuit when the first packet processing circuit fails.

10. (New) A switch according to claim 9 including a first multiplexer coupling inputs from the second or third interface to the first interface; a second multiplexer coupling inputs from the first or third interface to the second interface, and a third multiplexer coupling inputs from the first or second interface to the third interface.

11. (New) A switch according to claim 10 including a configuration register that configures which interface is output from each multiplexer.

12. (New) A switch according to claim 11 wherein the first and second line interface unit are coupled to telephone lines, and the first and second packet processing circuit convert telephone line calls into digital packets.

13. (New) A switch according to claim 9 wherein the first and second line interface unit and the first and second packet processing circuit are located in the same feature card.

14. (New) A method for connecting components together in a network processing system, comprising:

connecting a line interface unit to a processing system that processes data received over the line interface unit;

monitoring the line interface unit and the processing system for failures;

switching out the line interface unit when the line interface unit fails while maintaining operation of the processing system; and

automatically switching out the processing system when the processing system fails while maintaining operation of the line interface unit.

15. (New) A method according to claim 14 including automatically switching out individual failed modems in the processing system while other modems in the processing system maintain operation.

16. (New) A method according to claim 15 including automatically switching out individual failed framers in the processing system while other modems in the processing system maintain operation.

17. (New) A method according to claim 14 including automatically switching out individual failed framers and individual failed modems in the data processing system while other framers and modems in the processing system maintain operation.

18. (New) A method according to claim 14 including automatically switching out different failed line interface units in a same feature card or switching out different failed line interface units in different feature cards.

19. (New) A method according to claim 18 including connecting different clocks received from different line interface units to the processing system according to which of the line interface units are connected to the processing system.

20. (New) A system for connecting components together in a network processing

system, comprising:

means for connecting a line interface unit to a processing system that processes data received over the line interface unit;

means for monitoring the line interface unit and the processing system for failures;

means for switching out the line interface unit when the line interface unit fails while maintaining operation of the processing system; and

means for automatically switching out the data processing system when the data processing system fails while maintaining operation of the line interface unit.

21. (New) A system according to claim 20 including means for automatically switching out individual failed modems in the processing system while other modems in the processing system maintain operation.

22. (New) A system according to claim 21 including means for automatically switching out individual failed framers in the processing system while other modems in the processing system maintain operation.

23. (New) A system according to claim 20 including means for automatically switching out individual failed framers and individual failed modems in the processing system while other framers and modems in the processing system maintain operation.

24. (New) A system according to claim 20 including means for automatically switching out different failed line interface units in a same feature card or switching out different failed line interface units in different feature cards.

25. (New) A system according to claim 24 including means for connecting different clocks received from different line interface units to the processing system according to which of the line interface units are connected to the processing system.

26. (New) An article comprising a machine-accessible medium having associated data that, when accessed, results in the following:

connecting a line interface unit to a processing system that processes data received

over the line interface unit;

        monitoring the line interface unit and the processing system for failures;

        switching out the line interface unit when the line interface unit fails while maintaining operation of the processing system; and

        automatically switching out the data processing system when the data processing system fails while maintaining operation of the line interface unit.

        27. (New) The machine-accessible medium of claim 26 including automatically switching out individual failed modems in the processing system while other modems in the processing system maintain operation.

        28. (New) The machine-accessible medium of claim 27 including automatically switching out individual failed framers in the processing system while other modems in the processing system maintain operation.

        29. (New) The machine-accessible medium of claim 26 including automatically switching out individual failed framers and individual failed modems in the processing system while other framers and modems in the processing system maintain operation.

        30. (New) The machine-accessible medium of claim 26 including automatically switching out different failed line interface units in a same feature card or switching out different failed line interface units in different feature cards.

        31. (New) The machine-accessible medium of claim 30 including connecting different clocks received from different line interface units to the processing system according to which of the line interface units are connected to the processing system.